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JOINT REPORT OF THE VERMONT DEPARTMENT OF FORESTS, PARKS, AND RECREATION AND THE VERMONT DEPARTMENT OF AGRICULTURE INSECT AND DISEASE LABS

JANUARY, 1993

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INTRODUCTION

Increased demands for plant insect and disease diagnostic services to the general public and between various government agencies have focused state efforts on cooperative resource planning. The Vermont Agency of Natural Resources and the Vermont Department of Agriculture, Food and Markets have been operating a State laboratory facility in Waterbury since 1990. The Vermont Forestry Division, Forest Resource Protection section and the Division of Plant Industry agreed at the onset to work jointly, using a team approach. Although our labs are physically separated, we work together with the agriculture entomologist (Jon Turmel) and plant pathologist (Scott Pfister) to diagnose problems. This report focuses on our combined efforts and deals specifically with accomplishments that have to do with forest and shade trees. The Department of Agriculture offers other diagnostic services that are not being reported here.

During our first year of cooperation, we attempted to inventory all specimens submitted and collected, process and catalog contents of pheromone and sticky traps, analyze and curate light trap collections, rear unknowns, build the collection of slides and prints of disease, insects, and damage, and to enter appropriate data into national reporting systems such as CAPS (APHIS) and National Forest Health Protection (US Forest Service). Aside from responding to immediate needs for identification and relevant literature of state and county foresters and the public, our first year's work was beneficial in helping us develop and test a preliminary system of data collection and specimen cataloging and storage which will maintain and provide information in as accessible format for timely retrieval.

Providing Diagnostic Services: Our primary goal has been to respond to requests of state, county, and consulting foresters as well as the public's, for identification of insect and disease problems, and to provide control recommendations. Formal requests for identifications number about 240 to date.

Insect Detection and Monitoring: Pheromone, light, and sticky traps for several insect species are processed at our lab to aid in State surveillance, monitoring, and forecasting abilities. Pupal and egg surveys also contribute to these ends. Trap and survey information processed at our labs this year is presented below.

TRAP AND SURVEY INFORMATION PROCESSED IN 1992

Insect	Survey or Trap Type	# Sites	# Dates	# Traps	Total Traps or Sites Examined
Apple Ermine Moth	Pheromone (wing)	5	3	5	75
Balsam Gall Midge	Visual	20	20	0	400
Balsam Twig Aphid	Egg survey	4	1	20	80
Black Vine Weevil	Burlap traps	3	15	3	135
Black Vine Weevil	Visual	50	10	0	500
Bruce Spanworm	Visual	6	10	0	60
Cooley Spruce Gall Aphid	Visual	35	10	0	350
Forest Tent	Pheromone	4	1	5	20
Forest Tent	Light-Pheromone combination	1	9	1	9
General	Black light	3	150	1	450
Hemlock Looper (Spring)	Pupal survey soil samples	9	1	15	135
Hemlock Looper (Spring)	Light trap	1	17	1	17
Hemlock Looper (Spring)	Pheromone	3	1	6	18
Hemlock Looper (Fall)	Pheromone	11	1	1	11
Hemlock Looper (Fall)	Visual	6	10	0	60
Hemlock Wooly Adelgid	Visual	2	1	0	2

TRAP AND SURVEY INFORMATION PROCESSED IN 1992 (Cont')

Insect	Survey or Trap Type	# Sites	# Dates	# Traps	Total Traps or Sites Examined
Kermes Scale	Visual	1	1	0	1
Lecanium Scale (Fletcher)	Visual	35	10	0	350
Oak Leaf Tier	Pheromone	1	1	1	1
Oystershell Scale	Visual	2	1	0	2
Pear Thrips	Sticky Unbaited AM yellow trap	5	8	4	160
Roundheaded Apple Tree Borer	Visual	25	10	0	250
Saddled Prominent	Light	1 1	3 1	1 1	3 1
Spruce Budworm	Pheromone	21	1	3	63
Total Number of Traps or Sites Examined					3153

General Shade Tree, Forest, and Ornamental Inquiries: Telephone inquiries and requests for information from the Plant Diagnostic Labs numbered about 500 this year. Site inspections and recommendations numbered about 50.

VMC Leaf Study: We examined a total of 1800 leaves for insect and disease signs, symptoms, and actual pests. This included 200 leaves for each of three sample periods for each of three tree species. We maintain a photographic record of injuries, diseases, and insects observed, as well as a collection of insect specimens found on leaf samples.

Reference Collection of Color Photographic Prints and Slides: Throughout the year, macro and micro photographs and slides of insects and diseases of importance to trees have been taken to document their incidence and to establish a permanent reference for future educational identification purposes.

Newsletter: We experimented with the production and use of a newsletter, Bug Bytes, to bring together timely information about tree insect and disease problems from various parts of the State. An increase in numbers of samples submitted by county foresters seemed to be a direct result of newsletter distribution.

Reference Collection of Insect Specimens: Over the past year, we have added a considerable number of specimens to the insect collection here in Waterbury. Specimens have come to us from resource protection personnel, state and county foresters, the public, and through our own efforts. Routine light trap catches in Waterbury, Barre Town, and Hyde Park have contributed substantially to the collection. We have trapped at least 3 species of moths that are new records for the State. This year, we received, collected and sorted, insofar as possible, looper caterpillars from various stand types. A future goal is to obtain definitive identifications of these specimens. We've been very fortunate to have the assistance of John Grehan, post doctoral research associate at the University of Vermont , in the curation of Lepidopteran specimencs. The results of this work have been particularly applicable to attempts to sort light and pheromone trap collections.

Development of Database Management System: A database management system for samples and specimens is in place, thanks to the efforts of Al Patunoff, Agency of Natural Resources Automated Systems Specialist. Through this first-season use, we have identified ways to improve the system.

Cooperating with Various State Agencies: One of our goals has been to support, build, and maintain a cooperative working relationship between state agencies such as the Vermont Department of Forests, Parks, and Recreation, the Department of Agriculture, the Department of Environmental Conservation, and the University of Vermont. This multidisciplinary cooperation involves entomologists, plant pathologists, horticulturists, arborists, nurserymen, tree wardens, foresters and the public at large who work separately but can benefit from cooperative efforts.

Records of specimens examined are included on the following pages.

SAPSUCKING INSECTS, MIDGES, AND MITES

INSECT	HOST(S)	LOCALITY
Aphids *Cinara* sp.	Balsam fir Scots pine	Lincoln Rockingham Various areas
Balsam twig aphid *Mindarus abietinus*	Balsam fir	Lincoln
Catkin Bug *Kleidocerys resedae geminatus*	on Yew (not confirmed as source of food for this insect)	Bakersfield Barre Town
Fletcher Scale *Lecanium fletcheri*	Thuja	Essex Junction Woodstock Burlington
Lacebugs *Corythuca sp.*	Butternut	Morrisville Statewide
Oystershell scale *Lepidosaphes ulmi*	Beech	Wilmington Grand Isle Salisbury
Pine leaf adelgid *Pineus pinifoliae*	White pine	Lincoln
Pine needle scale *Chionaspis pinifoliae*	Mugho pine	Montpelier Statewide
Pine spittle bug *Aphrophora parallela*	Eastern hemlock	Cornwall
Pine tortoise scale *Toumeyella parvicornis*	Red pine	Bradford
Psyllidae *Cacopsylla annulata*	Sugar maple	S. Woodstock

SAPSUCKING INSECTS, MIDGES, AND MITES (Cont')

INSECT	HOST(S)	LOCALITY
Ragged spruce gall aphid *Pineus similis*	Red spruce	Wilmington
Spider mites *Oligonychus sp.*	Hemlock Arborvitae Balsam fir	Middlebury White River Junct. Shoreham
Spruce gall aphid *Adelges lariciatus*	European larch	Montpelier Salisbury Barre
Succulent oak gall *Dryocosmos quercuspalustris*	Red oak	Colchester
Vagabond aphid *Mordwilkoja vagabunda*	Poplar	St Albans
Wooly alder aphid *Paraprociphilus tesselatus*	Silver maple Alder	Montpelier Statewide
Wooly fold gall *Cecidomyia niveipila*	Red oak	Colchester

HARDWOOD DEFOLIATORS

INSECT	HOST(S)	LOCALITY
Alder leaf beetle Altica ambiens alni	Alder	Victory
Aspen leaf roller Pseudoexentera oregonana	Poplar	Middlebury
Birch leafminer Fenusa pusilla	Birch	Statewide
Birch skeletonizer Bucculatrix canadensisella	Birch	Barre Town Bethel
Elm sawfly Cimbex americana	Birch	Lincoln
Euonymus caterpillar Yponomeuta sp.	Euonymus	Stowe
Gypsy moth Lymantria dispar	Red maple Apple	Barre Town
Imported willow leaf beetle Plagiodera versicolora	Poplar	Middlebury Morrisville Hinesburg
Japanese beetle Popillia japonica	Burr oak Various	Danville Statewide
Large aspen tortrix Choristoneura conflictana	Blow in at lights?	Morrisville
Locust leafminer Odontota dorsalis	Black locust	Putney Richmond
Maple leafcutter Paraclemensia acerifoliella	Sugar maple	Chelsea Barre Town

HARDWOOD DEFOLIATORS (Cont')

INSECT	HOST(S)	LOCALITY
Maple leafroller *Sparanothis acerivorana*	Sugar maple	Bristol
Maple trumpet skeletonizer *Epinotia aceriella*	Sugar maple	Barre Town Montpelier
Mountain ash sawfly *Pristiphora geniculata*	Eastern mtn ash	Barre Town
Oak-leaf shot-hole *Japanagromyza viridule*	Red oak	Underhill Center Monpelier
Satin moth *Leucoma salicis*	Poplar	Danville
Spear-marked black *Rheumaptera hastata*	Variety	Elmore Jerusalem

SOFTWOOD DEFOLIATORS

INSECT	HOST(S)	LOCALITY
Dash-lined looper *Protobarmia porcelaria*	Hemlock/fir stand	Barnet
Dogwood sawfly *Macremphytus tarsatus*	Red pine	Barton
Introduced pine sawfly *Diprion similis*	White pine	Lincoln
Larch casebearer *Coleophora laricella*	Weeping larch	Waterbury
Salt marsh caterpillar *Estigmene acrea*	Norway spruce	Orwell Worcester Montpelier
Web-spinning sawflies *Pamphiliidae*	Scotch pine	Bristol
Yellow-lined conifer looper *Nyctobia limilaria*	Hemlock	Swanton Cornwall

BUD, SHOOT, AND STEM INSECTS

INSECT	HOST(S)	LOCALITY
Balsam shootboring sawfly *Pleroneura brunneicornis*	Balsam fir	Charlotte
Stem-gall wasp *Hemadas nubilipennis*	Blueberry	Montpelier
Linden borer *Saperda vestita*	Tilia species	Hinesburg
Locust twig borer *Ecdytolopha insiticiana*	Black locust	Addison Co. Putney
Pitted ambrosia beetle *Corthylus punctatissimus*	Sugar maple	East Poultney
Narrow-winged tree cricket Prob. *Oecanthus angustipennis*	Red maple	Hinesburg
Roundheaded appletree borer *Saperda candida*	Crabapple; Malus sp.	Elmore Barre Town Berlin Montpelier Waterbury Manchester Putney
Sawyer *Monochamus scutellatus*	Balsam fir	Stowe
Shothole borer *Scolytus rugulosus*	Apple	Waitsfield

MISCELLANEOUS INSECTS

INSECT	HOST(S)	LOCALITY
Apple maggot *Rhagoletis pomonella*	Apple (fruit)	Springfield
Bark lice Psocids	Sugar maple	Barnet Orange Morrisville Corinth
Checkered flower beetle *Tarsostenus univittatus*	Firewood	Middlebury
Codling moth *Cydia pomonella*	Apple (fruit)	Springfield
Eastern ash bark beetle *Hylesinus aculeatus*	Ash firewood	Springfield Northfield
Hemlock borer *Melanophila fulvoguttata*	Hemlock	Moretown E. Middlebury
Northeastern pine borer *Monochamus notatus*	White pine	Salisbury Moretown
Plum curculio *Conotrachelus nenuphar*	Cherry (fruit) Apple (fruit)	Montpelier Springfield Statewide
Rustic borer *Xylotrechus colonus*	Hickory firewood	Rutland Co.
Tanbark borer *Phymatodes testaceus*	Hickory firewood	Rutland Co.
Tarnished plant bug *Lygus lineolaris*	Apple (fruit) Pear (fruit)	Springfield

DISEASES

DISEASE	HOST(S)	LOCALITY
Anthracnose (Ash) *Apiognomonia errabunda*	Ash	Hinesburg
Anthracnose (Oak) *Apiognomonia quercina*	Oak	Hinesburg
Apple scab *Venturia inequalis*	Flowering crab	Morrisville
Ascochyta blight *Ascochyta syringae*	Lilac	Bristol
Black knot *Apiosporina morbosa*	Cherry	So. Windham
Botrosphaera canker *Botrosphaera* sp.	Red maple	Hinesburg
Brown rot *Monilia fructicola*	Cherry	Montpelier
Fire blight *Erwinia amylovora*	Hawthorn Manchu cherry Apple	Montpelier So. Londonderry
Fir-fern rust *Uredinopsis mirabilis*	Balsam fir	Lincoln
Fusarium canker *Fusarium solani*	Red maple	Essex Junction
Lophodermium needlecast *Lophodermium seditosum*	Scots pine	Bristol
Oak leaf blister *Taphrina caerulescens*	Red oak	Colchester

DISEASES (Cont')

DISEASE	HOST(S)	LOCALITY
Phomopsis twig blight *Phomopsis*	Thuja	Danville
Rhizosphaera needlecast *Rhizosphaera kalkoffi*	Colorado blue spruce	White River Junction
Shoot and leaf blight *Venturia sp.*	Poplar	Middlebury
Sirococcus tip blight *Sirococcus conigenus*	Blue spruce	Waterbury Greensboro
Swiss needlecast *Phaeocryptus* gaumanni	Douglas fir	Bristol Barre Town
White pine blister rust *Cronartium ribicola*	White pine	Charlotte

MISCELLANEOUS DISEASES

DISEASE	HOST(S)	LOCALITY
Flyspeck *Schizothyrium pomi*	Apple (fruit)	Springfield
Scab *Venturai inaequalis*	Apple	Statewide
Sooty blotch *Gloeodes pomigena*	Apple (fruit)	Springfield

ABIOTIC AND/OR SITE-INDUCED

We responded to quite a few questions regarding dieback and dwarfing of leaves, premature foliage chlorosis and coloration, winter injury, drought, frost damage, herbicide injury, mechanical injury, soil compaction (suffocation, black-topping, root damage due to adverse site conditions), and soil and site problems. Some examples follow.

CONDITION	HOST(S)	LOCALITY
Dieback, dwarfing of leaves, premature foliage coloration (Site deficiencies)	Azalea Butternut	Brattleboro Brattleboro
Fertilizer misuse	Sugar maple	Morrisville
Flagging (abiotic, prob. caused by transplant trauma to seedlings)	Balsam fir	New Haven
Frost damage	Taxus baccata repardens Sugar maple Norway maple	Charlotte Cornwall Whiting
Herbicide Reaction	Sugar maple Hemlock	Morrisville Stowe
Mechanical Injury, perhaps wind	Cherry	Wilmington
Nutrient Problem (possible)	Lupine Lilac	Danville Montpelier
Winter freeze injury	White spruce	Pownal

UNKNOWNS

CONDITION	HOST(S)	LOCALITY
"White pine needle blight"	White pine	Wallingford Weatherfield Bristol Stowe Plainfield, N.H. Williamstown S. Barre Brookfield Salisbury Brandon

Scott Pfister, Ron Kelley, Dale Bergdahl, and others have also noted the appearance of this condition in white pine. The cause is unknown, but 2 hypotheses posed include (1) a semi-mature needle blight thought to be caused by ozone, sulfur dioxide, heat and/or water stress to succulent needle tissue during the time of needle elongation in the spring, and/or (2) implication of a fungus similar to the needlecast fungi. The severity of the injury varies from year to year and some trees appear less tolerant than others. White pine needle blight is being studied by William Merrill at Penn State. His recent findings support the fungus hypothesis.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES */OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern White Cedar		Light damage only

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Arborvitae leaf miner

SCIENTIFIC NAME *Argyresthia spp.*

SPECIFIC TREE SPECIES AFFECTED

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future) Stable

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY	**TOWNSHIP**
Caledonia	
Rutland	

(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Balsam Fir	20 Ac.-Northern VT	Light
Christmas Trees		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Balsam gall midge

SCIENTIFIC NAME *Paradiplosis tumifex*

SPECIFIC TREE SPECIES AFFECTED Balsam Fir

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
5-20 years

SURVEY METHOD Tree by tree inspection of plantations within Vermont Scleroderris Quarantine Area.

TREATMENT (if any)

TREND (Past and future) Decreasing down from 146 acres detected in 1991. No damage expected in 1993.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:** Northern Vermont

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Balsam Fir	Statewide	Mostly Moderate
Christmas Trees		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Balsam twig aphid

SCIENTIFIC NAME *Mindarus abietinus*

SPECIFIC TREE SPECIES AFFECTED Balsam Fir

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
5-20 years

SURVEY METHOD Tree by tree inspection of plantations within Vermont Scleroderris Quarantine Area.

TREATMENT (if any)

TREND (Past and future) Somewhat decreasing in the North. 190 acres detected in plantation inspection compared to 256 acres in 1991. Should decrease further in 1993.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwoods, Aspen-Birch	16000	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Birch Defoliators

SCIENTIFIC NAME Bucculatrix canadensisella , Fenusa pusilla, Messa nana, Ancylis discigerana

SPECIFIC TREE SPECIES AFFECTED Paper Birch, Yellow Birch, Gray Birch

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future) Total acres decreasing. 29,300 acres mapped in 1991. Birch skeletonizer damage generally more important and birch leaf folder damage generally less important than 1991.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Bruce spanworm

SCIENTIFIC NAME *Operophtera bruceata*

SPECIFIC TREE SPECIES AFFECTED Sugar Maple

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future) Similar to 1991. Moths frequently observed. Light defoliation observed in scattered northern Vermont locations.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY	TOWNSHIP

(If needed, continue on reverse side)

COMMENTS

Caused 20-25% defoliation in a Vershire (Orange County) sugarbush.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwoods	140	Heavy (>60%)

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Cherry Scallop Shell Moth

SCIENTIFIC NAME *Hydria prunivorata*

SPECIFIC TREE SPECIES AFFECTED Black Cherry

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) Mature

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future) No heavy damage in southern Vermont areas which were defoliated in 1990-91. Damage in Caledonia County similar to 1991, in same location.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY Caledonia **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Spruce-Fir		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT: Conifer swift moth

SCIENTIFIC NAME: *Korsheltellus gracilis*

SPECIFIC TREE SPECIES AFFECTED

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD

TREATMENT (if any)

TREND (Past and future)

LOCATION MAP ENCLOSED _____ TAPE ENCLOSED _____

STATEWIDE _____ OR: High elevations

COUNTY _____ TOWNSHIP _____

(If needed, continue on reverse side)

COMMENTS

No new sites observed.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Spruce-Fir	165	scattered

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Eastern larch beetle

SCIENTIFIC NAME *Dendroctonus simplex*

SPECIFIC TREE SPECIES AFFECTED Eastern Larch

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Mature, Pole

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future) Stable. Little recent decline reported.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Mostly ornamentals &		Mostly light
roadsides		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Eastern tent caterpillar

SCIENTIFIC NAME *Malacosoma americanum*

SPECIFIC TREE SPECIES AFFECTED Apple, Cherry

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future) Similar to 1991

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Ornamentals		Light-Moderate Defoliation

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT European Snout Beetle

SCIENTIFIC NAME Phyllobius oblongus

SPECIFIC TREE SPECIES AFFECTED Sugar Maple

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD

TREATMENT (if any)

TREND (Past and future)

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY	TOWNSHIP
Addison	
Chittenden	
Lamoille	

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Mostly roadside		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Fall webworm

SCIENTIFIC NAME *Hyphantria cunea*

SPECIFIC TREE SPECIES AFFECTED Cherry & other Hardwoods

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Ground observation

TREATMENT (if any)

TREND (Past and future) Remains heavy in southeastern Vermont, although generally less damage than 1991.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

VI

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES* /OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood	none	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Forest tent caterpillar

SCIENTIFIC NAME *Malacosoma disstria*

SPECIFIC TREE SPECIES AFFECTED sugar maple

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD

TREATMENT (if any)

TREND (Past and future) Populations remain low. No defoliation. Mo moths in pheromone traps. Scattered sightings of larvae.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Oak-Hickory	160	Moderate (30-60%)

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Gypsy moth

SCIENTIFIC NAME *Lymantria dispar*

SPECIFIC TREE SPECIES AFFECTED No. Red Oak, White Oak

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Aerial, Monitoring plots

TREATMENT (if any)

TREND (Past and future) Collapsing. 8000 acres statewide - 1991. No defoliation expected in 1993.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY	TOWNSHIP

(If needed, continue on reverse side)

COMMENTS

Very few egg masses for 1993 in focal area monitoring plots.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Hemlock		Light

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Spring Hemlock Looper

SCIENTIFIC NAME Lambdina athesaria

SPECIFIC TREE SPECIES AFFECTED Hemlock

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Aerial, ground, egg mass, pupal survey, impact plots, pheromone traps

TREATMENT (if any) 60 acres sprayed with Bt

TREND (Past and future) Down from 1600 acres of heavy damage in 1991

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY	TOWNSHIP
Windham	

(If needed, continue on reverse side)

COMMENTS

Although moth flight was heavy in the spring, especially in or near previously defoliated areas, no new areas were defoliated in 1992.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Hemlock, Hemlock-Pine,	No damage observed	
Hemlock-Hardwood	from the air	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Fall Hemlock Looper

SCIENTIFIC NAME Lambdina fiscellaria

SPECIFIC TREE SPECIES AFFECTED Eastern Hemlock

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD aerial, larval beating, egg, moth traps

TREATMENT (if any)

TREND (Past and future) Increasing. Eggs, extracted larvae, and light defoliation observed in scattered locations. Moth catch in pheromone traps (16 locations) averaged 282/trap and ranged from 7 to 714. Heaviest in northern Vermont.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Plantation		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Hemlock woolly adelgid

SCIENTIFIC NAME Adelges tsugae

SPECIFIC TREE SPECIES AFFECTED Hemlock

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Tublings

SURVEY METHOD Eradication survey, Detection survey

TREATMENT (if any)

TREND (Past and future) No adelgids were found during any of the 3 eradication surveys done in the area where the insects were introduced in 1990.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY	**TOWNSHIP**
Windsor	

(If needed, continue on reverse side)

COMMENTS

18 additional hemlock stands statewide were inspected in late winter. No adelgids were found.

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Plantations	widely scattered	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Introduced Pine Sawfly

SCIENTIFIC NAME Diprion similis

SPECIFIC TREE SPECIES AFFECTED Red Pine and Scots Pine

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future) Remains common

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Roadside		light-moderate

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Locust leafminer

SCIENTIFIC NAME *Odontota dorsalis*

SPECIFIC TREE SPECIES AFFECTED Black Locust

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Ground observation

TREATMENT (if any)

TREND (Past and future) Stable

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY	TOWNSHIP
Windham	
Chittenden	

(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood	3700	M-H (>30%)

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Maple leafcutter

SCIENTIFIC NAME *Paraclemensia acerifoliella*

SPECIFIC TREE SPECIES AFFECTED Sugar Maple

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future) 1992 damage somewhat lower than 1991 levels (5200 acres). Populations probably temporarily depressed due to cool weather in 1991. May increase in 1992 93?

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood		Light Damage

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT: Maple leafroller

SCIENTIFIC NAME: *Sparganothis acerivorana*

SPECIFIC TREE SPECIES AFFECTED: Sugar Maple

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD: Ground observation

TREATMENT (if any)

TREND (Past and future)

LOCATION MAP ENCLOSED _____ TAPE ENCLOSED _____

STATEWIDE _____ OR:

COUNTY _____ TOWNSHIP Bristol

(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood		Light

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Maple trumpet skeletonizer

SCIENTIFIC NAME *Epinotia aceriella*

SPECIFIC TREE SPECIES AFFECTED Sugar Maple

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Ground observation

TREATMENT (if any)

TREND (Past and future) Generally less damage than previous years.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

Heaviest in northeastern Vermont.

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Oak Hickory		No moths caught

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Oak leaftier

SCIENTIFIC NAME Croesia semipurpurana

SPECIFIC TREE SPECIES AFFECTED Red Oak

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Pheromone traps

TREATMENT (if any)

TREND (Past and future) Moths were caught at two sites in 1991.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwoods		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Oystershell scale

SCIENTIFIC NAME *Lepidosaphes ulmi*

SPECIFIC TREE SPECIES AFFECTED Beech

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Ground observations plus one survey plot in Huntington (Camel's Hump S.F.)

TREATMENT (if any)

TREND (Past and future) Old damage remains evident but new damage beginning to show up.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:** scattered throughout

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

Survey Plot: Number of scales on overstory trees (Cod. & Inter.) same as in 1991 (about half of 1988 levels) or decreased somewhat while levels on suppressed trees have increased to nearly 1988 levels.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Christmas trees	12 acres	Light-Moderate

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Pales weevil

SCIENTIFIC NAME *Hylobius pales*

SPECIFIC TREE SPECIES AFFECTED Scots pine

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground survey of plantations in Schleroderris quarantine area.

TREATMENT (if any)

TREND (Past and future) 134 acres were detected during 1991 survey.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:** Northern Vermont

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood		Light

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Pear thrips

SCIENTIFIC NAME *Taeniothrips inconsequens*

SPECIFIC TREE SPECIES AFFECTED Sugar Maple, Black Cherry

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Aerial, Ground, Soil counts, Bud counts

TREATMENT (if any)

TREND (Past and future) Also only light damage in 1991

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

Numbers remain low. Apparently caused leaf drop of cherry in southwestern Windham County.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
White-Red-Jack Pine	100	Moderate

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Pine Leaf Adelgid

SCIENTIFIC NAME Pineus pinifoliae

SPECIFIC TREE SPECIES AFFECTED White Pine

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Regeneration

SURVEY METHOD Ground observation

TREATMENT (if any)

TREND (Past and future) Not observed at this location in 1991

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY Windsor **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood	No damage detected	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Saddled prominent

SCIENTIFIC NAME Heterocampa guttivitta

SPECIFIC TREE SPECIES AFFECTED Sugar Maple

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Aerial, Egg survey

TREATMENT (if any)

TREND (Past and future) Fewer larvae seen than 1991.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY	TOWNSHIP

(If needed, continue on reverse side)

COMMENTS

Moths easily caught in light traps. Few eggs were found at three sites surveyed.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwoods	No damage detected	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Spearmarked black moth

SCIENTIFIC NAME *Rheumaptera hastata*

SPECIFIC TREE SPECIES AFFECTED Birch

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future) Moths unusually abundant

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:** mostly northern Vermont

COUNTY	TOWNSHIP

(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET - Vermont

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Spruce-Fir		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT - Spruce Budworm

SCIENTIFIC NAME - Choristoneura fumiferana

SPECIFIC TREE SPECIES AFFECTED - Balsam Fir

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD - Pheromone Traps
Large Larva/Pupa Survey

TREATMENT (if any)

TREND (Past and future) - Stable or increasing

LOCATION MAP ENCLOSED _____ TAPE ENCLOSED _____

STATEWIDE _____ OR:

COUNTY _____ TOWNSHIP _____

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(If needed, continue on reverse side)

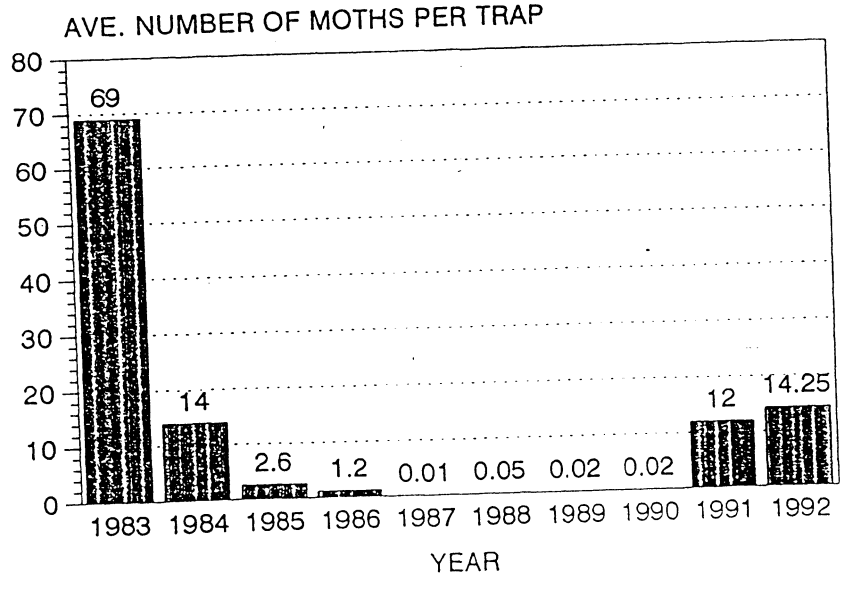
COMMENTS

-over-

VT

Spruce Budworm, Choristoneura fumiferana, continued at low levels, with no visible defoliation detected. The number of moths caught in pheromcne traps, which showed a sudden increase in 1991, continued at similar levels in 1992 (Figure). A special survey was conducted for large larvae in late June for the five locations (ten 18" branches per site) with the highest moth catch in 1991. Two budworm larvae were collected in Walden during this survey but none were found at the other four locations. This may indicate that the moths caught are a result of indigenous low-level populations rather than blow-ins.

SPRUCE BUDWORM MOTH CATCH: 1983-1992



3 TO 5 PHEROMONE TRAPS PER SITE FOR 15-22 SITES.

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES* /OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Oak Hickory	scattered	Light-Moderate

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Twig Pruner

SCIENTIFIC NAME Elaphidinoides villosus

SPECIFIC TREE SPECIES AFFECTED Red Oak

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground observation

TREATMENT (if any)

TREND (Past and future) Not observed in 1991

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
White Red Jack Pine		Light throughout

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT White pine weevil

SCIENTIFIC NAME *Pissodes strobi*

SPECIFIC TREE SPECIES AFFECTED White Pine

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground survey of plantations in Schleroderris quarantine area

TREATMENT (if any)

TREND (Past and future) Decreasing. 78 acres detected during survey compared to 171 acres in 1991.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY	TOWNSHIP

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Ornamentals		Light

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Yellowheaded spruce sawfly

SCIENTIFIC NAME *Pikonema alaskensis*

SPECIFIC TREE SPECIES AFFECTED Spruce

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future) Heavier than 1991

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:** widely scattered

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood	Champlain Valley	scattered
Oak-Hickory	165 acres mapped	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Anthracnose

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Sugar Maple, Oak

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future)

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

Additional affected trees throughout Champlain Valley that were not observable from the air.

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Ash yellows

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED White Ash

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Vermont Hardwood Health Survey

TREATMENT (if any)

TREND (Past and future) An increase in white ash mortality in recent years from 1.8% in 1986 to 9.5% in 1991 is thought to be due mostly to ash yellows.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood	2000	scattered mortality & dieback

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Beech bark disease

SCIENTIFIC NAME *Nectria coccinea*

SPECIFIC TREE SPECIES AFFECTED American Beech

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Mature, Pole

SURVEY METHOD Aerial, Ground Plots

TREATMENT (if any)

TREND (Past and future) Increasing. 600 acres mapped in 1991 (all in Northern Region).

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

Generally stable in monitoring plots.

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Butternut canker

SCIENTIFIC NAME *Sirrococcus clavigignenta-juglandacearum*

SPECIFIC TREE SPECIES AFFECTED Butternut

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground observation

TREATMENT (if any)

TREND (Past and future) Detected wherever butternut occurs

LOCATION MAP ENCLOSED _____ TAPE ENCLOSED _____

STATEWIDE X OR:

COUNTY _____ TOWNSHIP _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
White-Red Jack Pine	No new areas detected	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Caliciopsis canker

SCIENTIFIC NAME *Caliciopsis pinea*

SPECIFIC TREE SPECIES AFFECTED White Pine

AGE OF AFFECTED TREES **(understory, pole, mature, regeneration)**

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future) Some improvement in previously-infected stands.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

An impact survey on pole-sized trees is being completed.

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Ornamentals	Few new infections observed	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Cytospora canker

SCIENTIFIC NAME *Valsa kunzei (Cytospora kunzei)*

SPECIFIC TREE SPECIES AFFECTED Blue spruce, Norway spruce, Red spruce

AGE OF AFFECTED TREES **(understory, pole, mature, regeneration)**

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future)

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Spruce-Fir	3300	scattered mortality and dieback

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Decline Complex

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Red Spruce and to a lesser extent, Balsam Fir

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Mature

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future)

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

Upper elevation sites.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Ornamentals		Light

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Diplodia tip blight

SCIENTIFIC NAME *Sphaeropsis sapinea*

SPECIFIC TREE SPECIES AFFECTED Austrian pine, Scots pine, Mugo pine

AGE OF AFFECTED TREES **(understory, pole, mature, regeneration)**

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future)

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY	**TOWNSHIP**
Bennington	
Chittenden	
Lamoille	

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood	2000	Mostly mod. (30-60%)

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Drought in early summer, causing Leaf scorch

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED sugar maple

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
mature, pole

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future) Less damage than in 1991, when 55,600 acres of scorch was mapped in the same general areas in the Northeast Kingdom.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES* /OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwoods	4000	scattered trees

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Chlorosis, probably due to early season drought

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Sugar Maple, Red Maple, Beech

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Mature, Pole

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future) Down from 1991, when 7,100 acres were mapped.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Dutch elm disease

SCIENTIFIC NAME *Ceratocystis ulmi*

SPECIFIC TREE SPECIES AFFECTED American elm

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Vermont Hardwood Health Survey

TREATMENT (if any)

TREND (Past and future) Mortality in hardwood stands increased from 34% in 1986 to 65% in 1991.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

VI

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood	3300 acres mapped	Moderate (30-60%)

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Frost on May 24

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Beech, Ash, Oak, Aspen, Butternut, Locust

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future) Of the acres mapped, 270 are oak, remainder are northern hardwoods (predominantly beech).

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY	TOWNSHIP

(If needed, continue on reverse side)

COMMENTS

White Ash most affected with refoliation incomplete until late June. This was not detectable in first aerial survey due to refoliation. Damage to some upper elevation beech, red oak and other hardwoods was mapped.

FOREST HEALTH WORKSHEET

VI

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Plantation-Christmas trees	246 acres	Moderate

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Frost (May 24)

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Balsam Fir, Douglas Fir, Fraser Fir, White Spruce, Blue Spruce

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) 5-20 years

SURVEY METHOD Ground survey of plantations in Scleroderris quarantine area

TREATMENT (if any)

TREND (Past and future) Similar to 1991 damage (250 acres)

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:** Northern Vermont

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Aspen-Birch	Essex Co.	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Frost

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Quaking Aspen

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Ground

TREATMENT (if any)

TREND (Past and future)

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY Essex **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

Northern Essex County (Lemington) received the heaviest damage. Trees refoliated prior to aerial survey.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES* /OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood	23,000	scattered dieback
		& mortality

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Hardwood Decline & Mortality

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Sugar Maple, Red Maple

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Mature, Pole

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future)

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Northern Hardwood	7400	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Heavy Seed Crop

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Sugar Maple, Red Maple, White Ash

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Mature

SURVEY METHOD Aerial

TREATMENT (if any)

TREND (Past and future) 1991 was a poor seed year.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

Heavy seed production resulted in thin crowns.

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Aspen-Birch		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Hypoxylon canker

SCIENTIFIC NAME *Hypoxylon atropunctatum*

SPECIFIC TREE SPECIES AFFECTED Aspen

AGE OF AFFECTED TREES **(understory, pole, mature, regeneration)**

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future) Same as 1992

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Spruce Fir, Mixed, Hardwoods	8000	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Inundation

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Many

AGE OF AFFECTED TREES (understory, pole, mature, regeneration) All

SURVEY METHOD Aerial survey

TREATMENT (if any)

TREND (Past and future) Not mapped in previous years

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** X

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VI

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
Plantations		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Scleroderris canker

SCIENTIFIC NAME *Ascocalyx abietina (Gremmeniella abietina)*

SPECIFIC TREE SPECIES AFFECTED Red Pine, Scots Pine

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground survey of plantations in and adjacent to quarantine area.

TREATMENT (if any) Infection reduced in a state park in Peacham by basal pruning and removal of dead trees.

TREND (Past and future) Not found in any new locations for the 6th consecutive year.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:** Northern Vermont

COUNTY	TOWNSHIP

(If needed, continue on reverse side)

COMMENTS

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
White-Red-Jack Pine	56	scattered shoot mortality on scattered trees

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Sirococcus Shoot Blight

SCIENTIFIC NAME Sirococcus conigenus

SPECIFIC TREE SPECIES AFFECTED Red Pine

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Pole, Mature, Regeneration

SURVEY METHOD Ground

TREATMENT (if any)

TREND (Past and future) A sudden increase. Affecting shoots of overstory trees at all crown heights on two sites. Not previously observed at one and only on regeneration at the other.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY _____ **TOWNSHIP** _____

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(If needed, continue on reverse side)

COMMENTS

Unusually cool summer weather thought to be responsible for increase in infection.

VI

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
White-Red Jack Pine		

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT White pine blister rust

SCIENTIFIC NAME *Cronartium ribicola*

SPECIFIC TREE SPECIES AFFECTED White Pine

AGE OF AFFECTED TREES **(understory, pole, mature, regeneration)**

SURVEY METHOD Ground observations, ground survey of plantations in Schleroderris quarantine area.

TREATMENT (if any)

TREND (Past and future) Levels similar to 1991. 62 acres detected during survey compared to 66 in 1991.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY _____ **TOWNSHIP** _____

(If needed, continue on reverse side)

COMMENTS

VT

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
White-Red-Jack Pine	Statewide	

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT White Pine Needle Blight (semi mature Tissue Needle Blight)

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Eastern White Pine

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)
Mature, Pole, Regeneration

SURVEY METHOD Ground

TREATMENT (if any)

TREND (Past and future) Noticeable throughout. Heaviest damage yet observed.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE X **OR:**

COUNTY	TOWNSHIP

(If needed, continue on reverse side)

COMMENTS

Resulted in unsaleable Christmas trees in 8 widely-scattered plantations comprising 35 acres.

FOREST HEALTH WORKSHEET

VT

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
	100 acres	Heavy Windthrow

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Wind

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED All

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground evaluation

TREATMENT (if any)

TREND (Past and future)

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY	**TOWNSHIP**
	Georgia
	Fairfax

(If needed, continue on reverse side)

COMMENTS

Downdraft from August storm.

VI

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT Winter Injury

SCIENTIFIC NAME

SPECIFIC TREE SPECIES AFFECTED Conifers

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

SURVEY METHOD Ground observations

TREATMENT (if any)

TREND (Past and future) Less than 1991

LOCATION MAP ENCLOSED _____ TAPE ENCLOSED _____

STATEWIDE _____ OR:

COUNTY _____ TOWNSHIP _____

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(If needed, continue on reverse side)

COMMENTS

Little observed.